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IS : 7777 - 1987
(Reaffirmed 2002)

Indian Standard

SPECIFICATION FOR COTTON WEBBING ROLLED EDGES

(First Revision)

UDC 677·21·056·222

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 2

September 1988

Indian Standard

SPECIFICATION FOR COTTON WEBBING ROLLED EDGES

(*First Revision*)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards on 31 December 1987, after the draft finalized by the Narrow Fabrics, Webbings and Braids Sectional Committee had been approved by the Textile Division Council.

0.2 This standard, first published in 1975, has been revised mainly to modify tolerances of some characteristics on the basis of the experience of the Ministry of Defence in the procurement of cotton webbings according to this standard.

0.3 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the requirements of two varieties of rolled edges cotton webbing having width of 32 and 57 mm used in the manufacturing of waist belts and rifle slings. Webbing of 57 mm width shall be with slotted back.

2. MANUFACTURE

2.1 The webbing shall be made from cotton yarn of approximate count 60 tex × 5 (or $10^s/5$) having a minimum breaking load of 34·3 N. The yarn shall be bleached or dyed as required and rendered moisture resistant by a suitable finish. Direct dyes shall not be used in case of dyed webbing.

Note — Unless otherwise specified, the webbings are usually required to be supplied in olive green or khaki shade.

2.2 Webbing — The webbing shall be woven uniformly with firm, straight and well-formed selvedges. These should be free from weaving and other manufacturing defects. These shall also be free from sizing or filling material and shall not contain any matter liable to cause subsequent tendering.

3. REQUIREMENTS

3.1 The webbings shall conform to the requirements as given in Tables 1 and 2.

4. PACKAGING

4.1 The webbings shall be delivered in clean and dry condition, after being made into rolls of 25 m each. The rolls shall be without joints as far as practicable. However, a maximum of three joints in a roll may be permitted subject to individual piece length being not less than 5 m.

5. MARKING

5.1 The webbing shall be suitably marked at both the ends with the following:

a) Name of material;
b) Manufacturer's name, initials or trade-mark;
c) Length of roll; and
d) Year of manufacture.

5.1.1 Each roll of webbing may also be marked with the Standard Mark.

Note — The use of the Standard Mark is governed by the provisions of the Bureau of Indian Standards Act 1986 and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers, may be obtained from the Bureau of Indian Standards.

6. SAMPLING AND CRITERIA FOR CONFORMITY

6.1 Unless otherwise agreed to between the buyer and the seller, the number of rolls to be selected at random from a lot shall be as given in Table 3.

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*Rules for rounding off numerical values (*revised*).

TABLE 1 PHYSICAL REQUIREMENTS OF COTTON WEBBINGS ROLLED EDGES/SLOTTED BACK

(*Clause* 3.1)

VARIETY No.	DIMENSIONS					ENDS			PICKS/cm	MASS	BREAKING STRENGTH FULL WIDTH STRIPS × 20 cm BETWEEN GRIPS (*see* NOTE 2)	WEAVE
	Width	Length	Slot			Full Width Including Rolled Edges	Each Rolled Edge	Binding Ends				
			Depth	Width	Distance between two adjoinings slots							
	mm	m/roll	mm	mm	mm					g/m	N (*see* Note 3)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	32±1	25 or as agreed	—	—	—	174	22	—	11	72	2 940	Double Plain/ Double Oxford
2	57±2	25 or as agreed	16	11	10	282 (including binding ends)	12	17	6 (*see* Note 1)	125	5 880	Triple Plain/ Triple Oxford
Tolerance	—	± 5 percent	±1	±1	±1	±5 percent	±1	±1	±5 percent	±10 percent	−10 percent	—
Method of Test	←IS : 1954-1969*→					←IS : 1963-1981†→			IS : 1963-1981†	IS : 1964-1970‡	IS : 1969-1985§	Visual

NOTE 1 — Count the picks on the face side of the webbing to the side having no slots.

NOTE 2 — The test specimen is prepared by pulling out all the core threads from the rolled edges.

NOTE 3 — 1 N is approximately equal to 0·102 kgf.

*Methods for determination of length and width of fabrics (*first revision*).

†Methods for determination of threads per unit length in woven fabrics (*second revision*).

‡Methods for determination of weight per square metre and weight per linear metre of fabrics (*first revision*).

§Methods for determination of breaking load and elongation of woven textile fabrics (*second revision*).

TABLE 2 OTHER REQUIREMENT OF COTTON WEBBING, ROLLED EDGES/SLOTTED BACK

(*Clause* 3.1)

SL No.	CHARACTERISTIC	REQUIREMENT	METHOD OF TEST
(1)	(2)	(3)	(4)
i)	*p*H Value	5·0 to 9·0	IS : 1390-1983* (Hot method)
ii)	Moisture-proofness — Absorption, percent, *Max*	50	Appendix A
iii)	Colour fastness to		
	a) Light	3 or better	IS : 2454-1985†
	b) Washing, Test 3		IS : 764-1979‡
	Change in colour and	2 or better	
	Staining of adjacent fabric	2 or better	

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*Methods for determination of *p*H value of aqueous extract of textile materials (*first revision*).

†Method for determination of colour fastness of textile materials to artificial light (Xenon lamp) (*first revision*).

‡Colour fastness of textile materials to washing: Test 3 (*second revision*).

TABLE 3 SAMPLE SIZE AND PERMISSIBLE NUMBER OF DEFECTIVE ROLLS

(*Clause* 6.1)

NUMBER OF ROLLS IN THE LOT	SAMPLE SIZE	PERMISSIBLE NUMBER OF DEFECTIVE ROLLS	SUB-SAMPLE SIZE
(1)	(2)	(3)	(4)
Up to 100	8	0	3
101 to 300	13	1	4
301 to 500	20	2	5
501 to 1 000	32	3	7
1 001 and above	50	5	10

6.2 CRITERIA FOR CONFORMITY

Characteristic	*Number of Test Specimens*	*Criteria for Conformity*
Dimensions, ends and picks	According to col 2 of Table 3	Defective rolls shall not exceed the number given in col 3 of Table 3
Breaking load, colour fastness, mass, *p*H value and moisture proofness	According to col 4 of Table 3	All the test specimens shall pass the tests

APPENDIX A

[*Table* 2, *Sl No.* (ii)]

METHOD FOR DETERMINATION OF WATER ABSORPTION OF WEBBING

A-1. TEST SPECIMENS

A-1.1 For the purpose of this test, cut out pieces of webbings from all the test samples of the following dimensions:

a) Length	10 cm
b) Width	Full width

A-2. EQUIPMENT

A-2.1 An apparatus as illustrated in Fig. 1 consisting of the following:

a) A water tank (made of non-corrosive material) having a dimension of approximately 40 × 20 × 20 cm or any other suitable size.

b) A steel roller of approximately 7·5 cm diameter weighing about 18 kg.

c) A vulcanized rubber pad and of approximately 30 × 30 × 1·5 cm.

d) Blotting paper having a thickness of 0·2 to 0·25 mm and a weight of 120 to 150 g/m^2. The blotting paper should be capable of absorbing 0·3 ml of water in 30 seconds.

e) A metallic sinker, preferably a rod, of approximately 1 cm diameter and 35 cm length.

f) Wire hooks.

A-3. PROCEDURE

A-3.1 Rig up the equipment as illustrated in Fig. 1. Take 5 test specimens previously conditioned in an atmosphere of 65 ± 2 percent relative humidity and 27 ± 2°C temperature for a period of 48 hours. Weigh these test specimens together to the nearest 10 mg. This weight shall be W_1.

A-3.2 Attach a wire hook to one end of each specimen and a length of thread to the other end as illustrated in Fig. 1. Keep the specimen immersed in the distilled water contained in the tank for 30 minutes at 27 ± 2°C after attaching the metallic sinker to the hooks so that the specimens remain immersed in a vertical position as shown in Fig. 1. The ends of threads attached to the other ends of the specimen are passed over a suitable rod placed over the tank in order to keep the specimens steady in the vertical position during the period of immersion. The water in the tank should be sufficient

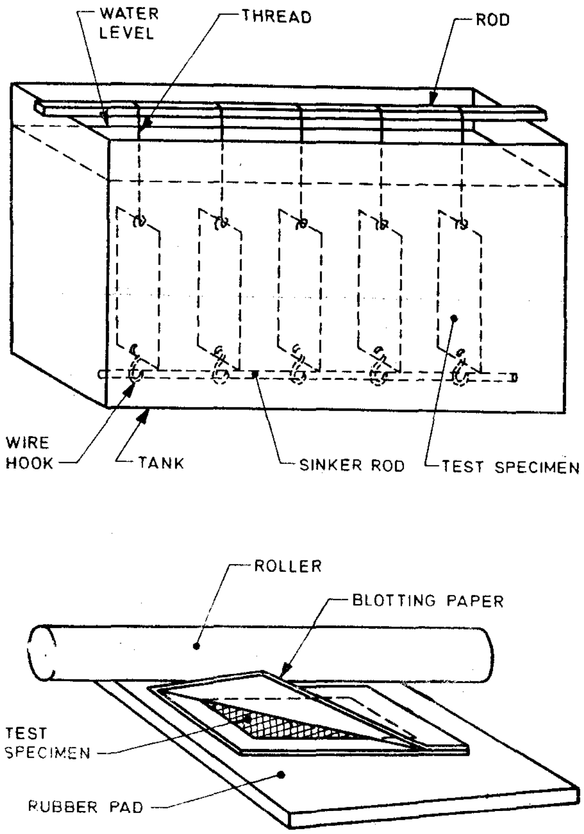

FIG. 1 EQUIPMENT FOR TESTING MOISTURE ABSORPTION

so as to keep the top edges of the specimens about 5 cm below the water level. At the expiry of 30 minutes, remove all the 5 specimens and after detaching the hooks and the threads, invert them by 180° so that the top edge becomes the bottom edge. Each edge of the specimen is then held in contact with the surface of a tray for about 10 seconds to drain off any adhering water. Take one test specimen and enclose it between two layers of blotting papers on each side. The size of the blotting paper pieces should be such that they extend about 2 cm beyond each edge of the specimen. Place the specimen enclosed by blotting papers on the rubber pad and roll over it a steel roller without exerting any additional pressure beyond the weight of the roller, the roller being rolled once with its length parallel to the long side of the specimen. Remove the pieces of blotting papers from the test specimen and put it in between a set of fresh blotting papers as before and roll it over with the roller as before. Remove the test piece from the blotting paper pieces and place it in a beaker (without spout) covered with a lid.

A-3.3 Repeat the process on all the remaining specimens. Remove the test specimens from the beaker and weigh them collectively to the nearest 10 mg and this weight shall be W_2.

A-4. CALCULATION

A-4.1 The difference between W_1 and W_2 is the amount of water absorbed by the specimen and is expressed as percentage of the original weight of the specimens thus:

$$\text{Percentage absorption} = \frac{W_2 - W_1}{W_1} \times 100$$

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Printed at Central Electric Press, Delhi-110007